

In A Nutshell

Spring - Summer 2018/19

Max Fremder

**2018 Australian Almond Industry Hall of Fame
Inductee**



**Water use in the Australian
almond industry**

Insights into the global trade environment

**2018 Australian Almond Conference
Review and photos**

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In A Nutshell

The Official Newsletter of the Australian Almond Industry

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On the Cover:

Max Fremder, the 11th inductee into the Australian Almond Industry Hall of Fame (left) with Neale Bennett, ABA Chairperson. Photo credit: Neville Sloss, courtesy the Australian Nutgrower

In A Nutshell

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The Almond Board of Australia is the peak industry body representing the interest of almond growers, processors and marketers in Australia. In a Nutshell is published by the ABA to bring news to all industry contacts and members.

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ABA Membership Why become a member?

The ABA is the peak representative body for the Australian almond industry and as such addresses many issues that impact on all participants in the industry including growers, processors and marketers and those that supply inputs. These impacts can be positives such as free trade agreements or promotion to stimulate demand and hence prices or they can involve minimising negative situations such as food safety issues, market access problems, chemical registrations etc.

The ABA develops and drives the implementation of the Australian industry's strategic plan which is done to benefit all producers and other industry participants. The strategies involve building domestic and export markets, the key to strong grower returns, addressing a wide range of risks from the availability of production inputs to government policies that impact on costs and yields. These matters effect on the bottom lines of almond enterprises. The ABA's whole of industry strategies have been successful and have worked to ensure the large increases in production have been cleared.

The ABA operates a number of activities that support industry and generate revenue to fund its operations and keep membership fees at a low and affordable cost. Being an ABA member provides crucial support for your industry body that we need and appreciate. A strong membership base provides added force in our representation of industry to government and in the wider community.

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Executive

The Australian industry enters the new year with high hopes for a record crop after four years of plateaued production figures of around 80,000 tonnes. It is estimated our 2019 crop will exceed 90,000 tonnes for the first time, providing a capacity to service export markets with an estimated additional 10,000 tonnes of product.

The start of the new year saw the tariff on Australian almonds entering China reduced from 10 percent to zero following the final annual phased reduction of 2 percent. This favourable status for Australian almonds comes at a time when China has imposed heavy retaliatory tariffs on US products including Californian almonds.

The Free Trade agreements in Asia have been valuable in increasing interest in Australian almonds and the recent Trans Pacific Partnership that includes South American

countries may provide some opportunities going forward. With the Australian government's focus on free trade agreements, it was interesting to note at the recent California Almond Conference that the USA still has the numerical advantage, by a slight margin, when it comes to agreements with countries importing almonds.

The devaluation of the Australian dollar compared to the US greenback is also playing a part in providing improved grower returns. During 2018, the Australian dollar fell from \$0.7832 to \$0.7042 US cents being a devaluation of 10.01%. Given the global price is set in US\$ per pound, this fall adds to the return from export sales in Australian dollars.

Despite the significant increase in Australian production in 2019, the key factor influencing the global almond market will be the Californian bloom in February and

"It is estimated our 2019 crop will exceed 90,000 tonnes for the first time"

ative pdate

the impact of a good or poor pollination period. With new plantings bearing higher yields as trees mature, the US production is projected to increase towards 3 billion pounds over the next few years.

Continuing substantial annual growth in demand is expected as it is being driven by improving living standards in major export markets, the broadening range of new food products using almonds as an ingredient, and the increasing consumer awareness of the health benefits of almonds. The heavy investment in promotion by the Almond Board of California in their domestic and overseas markets and the Almond Board of Australia on the domestic market is supporting this growth in demand.

The balance between demand growth and supply will determine the global price and the impact of tariffs and foreign exchange rates will influence the return to growers.

With a potential record crop to harvest, the fundamentals of strong grower returns are in place. All the best for harvest and the year ahead.



Neale Bennett, Chairman

Ross Skinner, CEO

A handwritten signature in black ink, appearing to read "Neale Bennett".

A handwritten signature in black ink, appearing to read "Ross Skinner".

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AUSTRALIAN ALMONDS
OVERVIEW
CONFERENCE 2018

**OVERVIEW AND PHOTOS
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The 2018 Australian Almond Conference (AAC) held in Melbourne at the Pullman Hotel from October 30 – November 1 was the highest attended conference to date, with 484 registered delegates.

The trade exhibition featured 45 stands, the maximum capacity available. A reserve list has now been established for the 2020 AAC. Growers, marketers, processors, suppliers and members of the research community attended in strong numbers and benefited from the carefully crafted program and from the networking that takes place at this biennial industry event.

The Conference was widely acknowledged as the best conducted to date with much

positive feedback provided during the event from all industry sectors. The calibre of speakers and keynote presenters is the foundation on which a successful Conference is based and the 2018 program covered a wide mix of topics with high levels of engagement. The program enabled industry participants to build on their knowledge in areas such as: best practice and research updates; industry supply and demand statistical data; market development information;





and an insight into future risks and opportunities.

The 31st October (Day 1) was opened by Senator the Hon.

Richard Colbeck, Assistant Minister for Agriculture and Water Resources. The

first day was divided into three segments, the first being:

production technology which had a panel discussion concluding the segment.

The second, global market development and third, global almond industry both of which had speakers from California displaying the

relationship between the Australian and American industry. The 1st November (Day 2) included a session on future challenges, national marketing advantages and the future of Australian almonds.

Both international and national keynote speakers gave presentations at the 2018 conference including: Brent Holtz, Pomology Farm Advisor, University of California; David Haviland, Entomology Farm Advisor, University of California; Richard Waycott, President and CEO, Almond Board of California; Hayden Higgins, Senior Analyst – Horticulture, Wine, Rabobank (New Zealand); and local keynote speaker Bernard Salt, Social Commentator, The Demographics Group. The attendance at each



| Pullman Hotel, Albert Park, Melbourne | October 30 - November 1 2018 |



others' conferences has helped establish and build the strong relationship that exists between the Australian and Californian almond industries.

Networking was a key reason for many choosing to attend. The Welcome Function, Dinner and Trade Exhibition provided a good environment to meet with the wide range of delegates and develop worthwhile contacts with whom to exchange ideas and practices. The almond industry is recognized for its co-operative nature and the Conference is an event that enhances this characteristic of unity with shared advice building the spirit of support and community within the industry members.



The sold out Dinner welcomed its eleventh inductee into the Hall of Fame, Mr Maxwell Fremder, acknowledging his role in pioneering large scale orchard developments and modern processing facilities that have become the basis of the current Australian industry. The induction ceremony acknowledged Max's and the contributions of past industry members in laying the foundation for the almond industry that is now one of Australia's most valuable horticultural industries.

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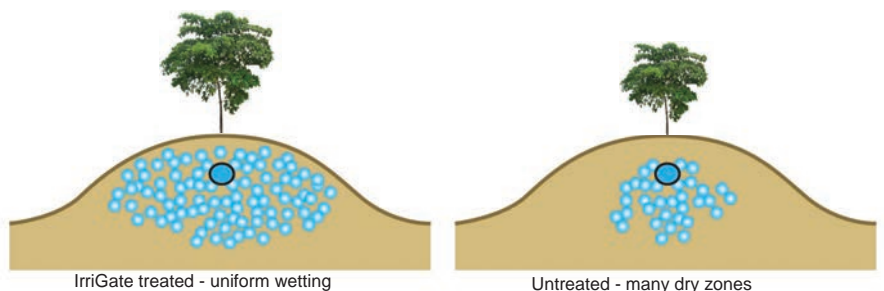
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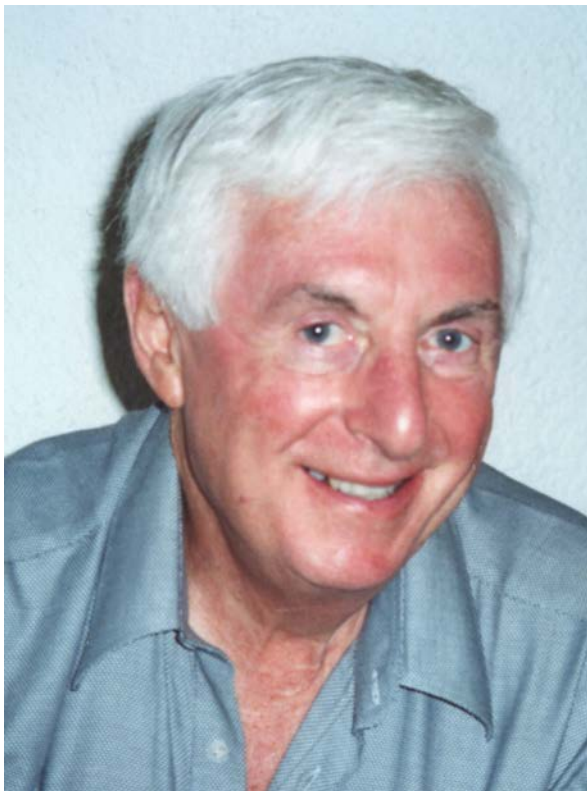


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2018 Inductee Max Fremder



Max Fremder's business acumen and his financial and personal investment have greatly contributed to almonds becoming a major horticultural industry in Australia and to Australia becoming a significant global producer.

Max's early career was spent in the agricultural chemical industry as founder of Nufarm Chemicals. In 1954, at just 24 years of age, he registered Nufarm's company name. Max's strong work ethic and great people skills saw the company flourish.

In 1959, he met and married his wife Judy. The couple made a strong team as Nufarm grew over the next 30 years. In the early years, Max spent countless hours building the business and much of

this time was spent with farmers where he honed his understanding of the land and the people who worked it.

Max sold Nufarm in the mid 1980s and began investing in other ventures, mainly in agriculture. His first interest in almonds was with Defender Farms' orchards that traded as Kyndalyn Park Almonds.

Lars Wester was appointed as Managing Director of Defender Farms in 1992. He had ambitions for growing the business and Max was offered a directorship in 1996 to bring his agricultural and business experience to the company. Max saw huge potential for the Australian almond industry in being counter seasonal to California. He understood that with investment, yields from the existing orchards could be meaningfully increased.

Max accepted the directorship provided he could buy a substantial stake in the business and be heavily involved in the daily affairs of the business. After joining the Defender board in May he was appointed Chairman in November.

With the board's approval, Max successfully disposed of the non-profitable divisions of Defender retaining only the almonds. The Defender name was also sold to raise money for the much needed fertiliser, water and irrigation system upgrades. A new company name, "Select Harvests", was registered.

At the time Max joined the business, the processing plant located at Kyndalyn Park was largely incomplete and was an amalgam of equipment from different manufacturers. Max identified the need to complete the plant and increase throughput to at least 6,000 tonnes to reduce unit processing costs. He set about achieving this. With the lag time between planting trees and

Fremder



commercial production, Max recognised the difficulty Select Harvests faced in raising capital to increase orchard area, so new ways of funding were investigated. The concept of inviting outside investors to drive expansion was introduced in 1999 but proved to be problematic with a plan to establish 200 hectares being undersubscribed by 120 hectares. Demonstrating enormous faith in the industry, Max entered an agreement to establish the shortfall himself. The new orchard was planted and managed by Select Harvests at their Carina orchard.

In 1999, John Bird was appointed CEO of Select Harvests and he and Max were a formidable team capable of implementing the plans for expansion.

A further 200 hectares followed in 2000, owned by Almond Orchards Australia Limited.

Select Harvests and Timbercorp formed a strategic alliance in 2001 that saw the emergence of a new era for Select Harvests and the Australian almond industry. Rising consumer demand and improved almond prices attracted investors to the industry. Select Harvests established its own nursery to provide high quality trees for planting.

Max's prediction of industry growth was being realised as largescale orchard plantings were rapidly being established and managed for investors predominantly through the Timbercorp alliance. 16,000 hectares of new orchards were planted over an eight-year period of which 13,000 hectares were Timbercorp's.

By 2004, Select Harvests managed around 65% of Australia's almond orchards and was amongst the world's top five growers. The industry plantings in 2007 alone were nearly double the size of the total Australian industry's orchards that existed prior to 2000.

By 2008, the industry had grown to 28,000 hectares. Most of this expansion had come via Select Harvests under Max's chairmanship. In the 12 years from when he joined the board, Select Harvests had grown from 770 hectares to over 15,000 hectares under management.

The orchard expansion required a new largescale, state of the art processing plant to be built at Carina West incorporating new technologies to enhance product quality.

In 2006, the Fremder, Yeo and Leonard families, who created Almas Almonds, established a 442 hectare orchard. After Max retired from Select Harvests in 2008, the family's almond orchards were self-managed. The initial 120 hectare Fremder orchard was sold in 2013. Almas Almonds established two further orchards and currently farms 1,138 hectares that supply Almondco Australia.

Max continues to be enthusiastically involved with the industry through Almas Almonds, a company that supports the industry through the contributions of their staff to committees and research project reference groups.

Australia is now the world's second largest producer of almonds having grown nearly tenfold since 2000. The steep trajectory of industry expansion was initiated and guided under Max Fremder's stewardship of Select Harvests and relied in no small part to his business skills and family's personal investment in orchards to provide initial momentum.

**Max Fremder was inducted into the
Australian Almond Industry Hall of Fame in
October 2018**

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5 minutes with... Ben Wiblin

"It is of upmost of importance to be in control of (insect) populations to ensure all losses are kept to a minimum"

This edition of "5 minutes with ..." is with Ben Wiblin, the ABA's new Industry Development Officer, who began work recently at the Loxton Office.

Tell us a little about yourself and your background.

I'm 22 years old and come from a family of five with two sisters. I grew up on a turf farm in the Murraylands before moving to an Adelaide boarding school for four years. Post schooling, I have since completed a Bachelor of Agricultural Science at the University of Adelaide and begun working at the ABA.

What does your role with the Almond Board of Australia involve?

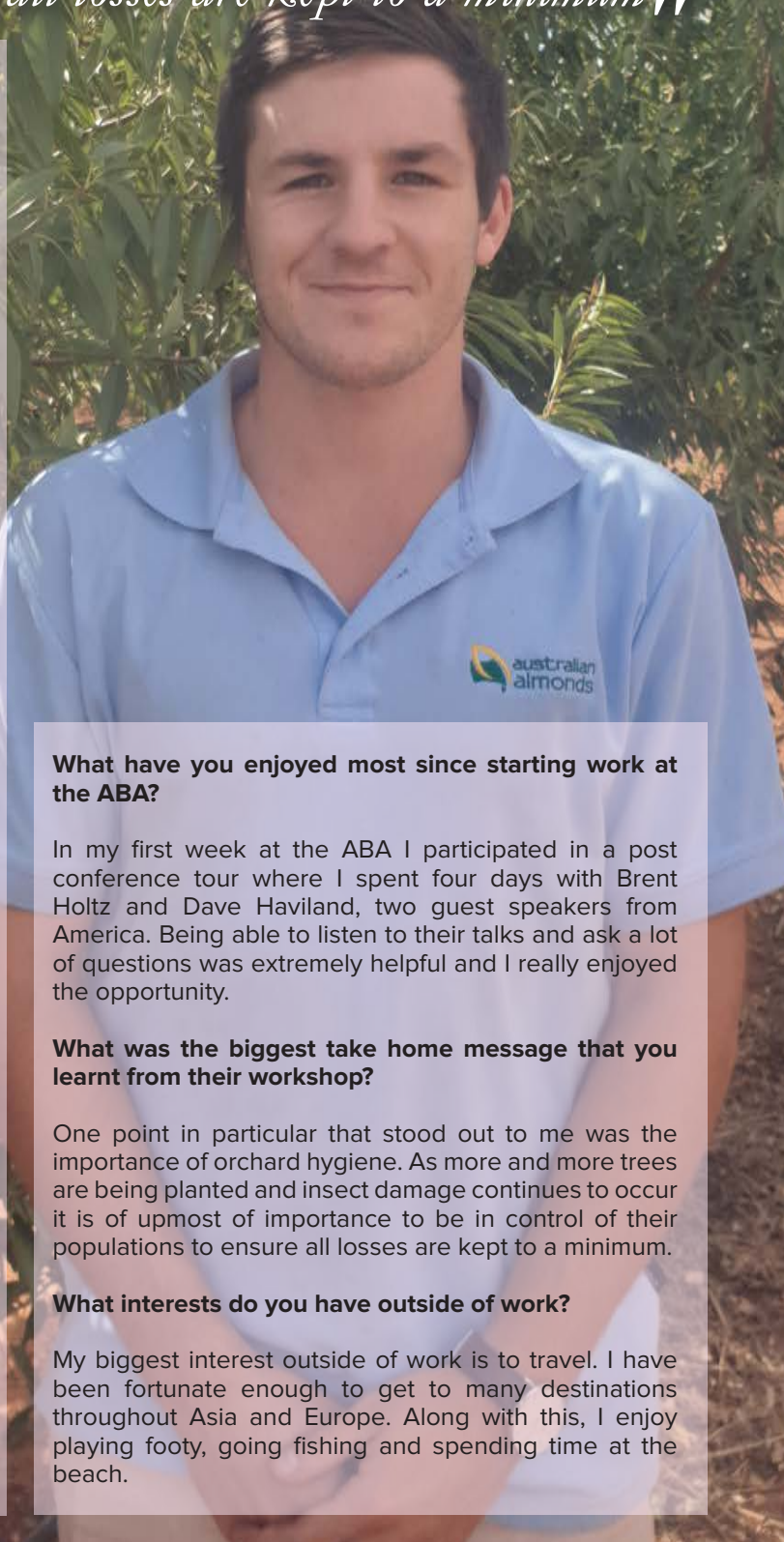
My role at the ABA as an industry development officer is to organise and participate in activities that aim to facilitate extension of new research in a bid to increase industry knowledge and efficiency. My position allows me to be in direct contact with both the growers, researchers and the ABA committees, providing me with a great opportunity to work with a large range of stakeholders to develop my knowledge. Along with this, the ABA run a large budwood program that I'm heavily involved in. This includes site management as well as the cutting and supplying of budwood.

Do you have any experience in Agriculture?

Growing up on a turf farm has given me a lot of experience in agriculture. I have been involved in many on farm practices including machinery operation, fertiliser applications, irrigation installation to name a few. I have also been involved in broad acre agriculture, where I assisted in livestock and grain production. To accompany this, my degree in Agricultural Science has given me a firm background in soil and plant science which will be extremely important when taking on new challenges throughout my career.

What do you find exciting about the future of agriculture?

The future of agriculture looks extremely bright as technology continues to improve efficiency through automating manual labour and allowing growers to have greater control of their production systems. Thus, making the future of agriculture very exciting as it continues to grow and evolve around the ever-changing seasons and demand for higher yielding crops.



What have you enjoyed most since starting work at the ABA?

In my first week at the ABA I participated in a post conference tour where I spent four days with Brent Holtz and Dave Haviland, two guest speakers from America. Being able to listen to their talks and ask a lot of questions was extremely helpful and I really enjoyed the opportunity.

What was the biggest take home message that you learnt from their workshop?

One point in particular that stood out to me was the importance of orchard hygiene. As more and more trees are being planted and insect damage continues to occur it is of upmost of importance to be in control of their populations to ensure all losses are kept to a minimum.

What interests do you have outside of work?

My biggest interest outside of work is to travel. I have been fortunate enough to get to many destinations throughout Asia and Europe. Along with this, I enjoy playing footy, going fishing and spending time at the beach.

MARKETIN

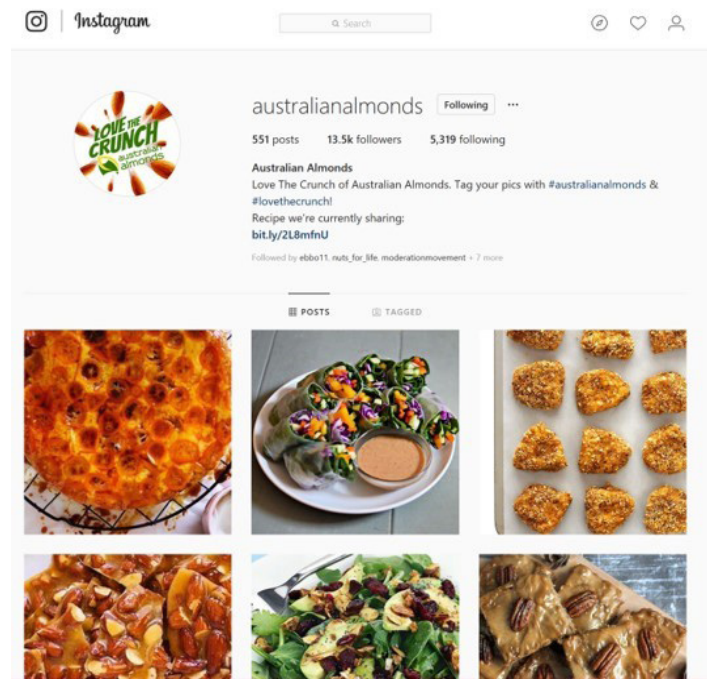
Domestic Update

Our 2018-19 Domestic Marketing Program included two important pieces of consumer research that would enable us to deepen our understanding of the Australian consumers attitudes and behaviours in relation to almonds and allow us to fine tune our marketing activities.

The first piece of research was a Deep Dive by Nielsen into their Homescan tracking data for almonds. This project looked at the 52 weeks to August 11, 2018 versus the 'Year Ago'. Note: this research only includes retail sales of 'full almond' products including natural and roasted almond kernels as well as the range of blanched almonds. It does not include products that have almonds as an ingredient or in mixed nut products with almonds included.

The study examined the shopping behaviour of 'Heavy' and 'Light' almond buyers. The Heavy buyers purchased 80% percent of the volume of almonds sold but only represent 36 percent of the shoppers. The Heavy buyer on average purchased a packet of almonds 6.2 times in the past year compared to the Light buyer who purchased a packet of almonds 1.7 times in the past 12 months.

The study also looked at the segment of households who purchased some nuts in the past year but no almonds. When looking at the product



composition of our 'Nuts but no almonds' segment, the two key product ranges were cashews and mixed nuts. Both of these product types are typically oil roasted and salted.

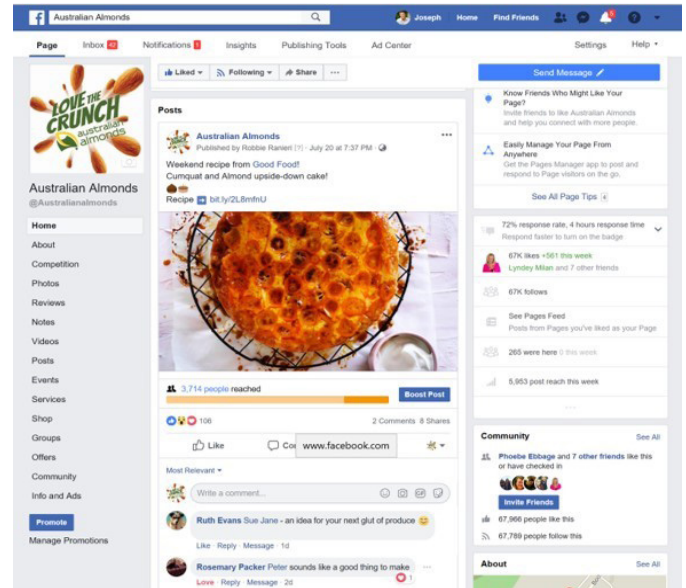
The Deep Dive looked at the demographic comparison between our Heavy and Light buyers. Our Heavy buyers were significantly more likely to be in the older Senior Couples and Established Couples segments than in the younger 'Bustling Families' and 'Small Scale Families' segments. Also our Heavy buyers were almost twice as likely to be in Households with incomes above \$100,000 than in households with incomes below \$50,000.

This Nielsen Deep Dive study helps us understand our opportunity to grow almond consumption in Australia by learning about the behaviours and characteristics of our Heavy buyers in comparison to our Light buyers. Our challenge is to increase the purchase frequency of our Light buyers.

The other major research study in the last quarter of 2018 was a quantitative research study conducted by the Galaxy-YouGov agency. This is the research firm that conducts the 'Newspoll' branded research for The Australian. A sample of 2,074 Australians aged over 18 years living throughout Australia participated in the study.

G MATTERS

We engaged a number of food bloggers and social media influencers to promote the use of almonds in a range of recipes.



The study found that 93 percent of the population eat nuts with only 7 percent of the respondents saying that they did not eat nuts. Two thirds of the nut consumers (63 percent) eat almonds at least once a month. A further 31 percent eat almonds less often. Only 6 percent of nut eaters indicated that they never eat almonds. 41 percent of nut consumers eat almonds at least once a week.

Snacking on almond kernels by themselves is the most popular way to consume almonds (56 percent), followed by eating almonds mixed with other nuts and fruits (50 percent) or as ingredients in other foods (46 percent).

Almonds are most commonly enjoyed as an afternoon snack (54percent). Other popular occasions include as a morning snack (29 percent), after dinner (28 percent) and at breakfast (21 percent).

More than 90 percent of Australians believe almonds are healthy and nutritious. Australians also believe that almonds taste good (87 percent), are easy to find in stores (87 percent),

are versatile (85 percent) and convenient (85 percent). However, fewer Australians believe that almonds are good value for money (64 percent).

77 percent of Australians believe that eating almonds promotes good heart health, and most believe they also help to maintain a healthy weight (69 percent). Less are sure that almonds help lower cholesterol (62 percent), assist with fitness and sports recovery (60 percent) or promote weight loss (56 percent).

These two studies have reaffirmed our marketing direction to maintain our communication around the heart health benefits of almonds to continue to grow consumption in our older demographic segments and to build on our communication with our Family segments via our messaging around 'healthy after-school snacking' and 'fitness and sports nutrition', our relationship with the AFL Players Association with AFL and AFL Womens player ambassadors helping us communicate with our younger audiences. One of our AFL ambassadors last year was the 2018 Brownlow Medallist, Tom Mitchell.



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MARKETING MATTERS

Export Update

The dominant driver of Australian almond exports in the last quarter of 2018 was the increase in demand from China due to their tariff dispute with the USA. The Chinese Government retaliated to US tariff movements by increasing the tariff on Californian almonds to 50 percent. The China-Australia Free Trade Agreement had lowered tariffs on Australian almonds to 2 percent in 2018 with it reducing to zero in January 2019.

Our November Position Report highlights the changing nature of Australian almond exports. For the Australian marketing year to date, that is from March to November, exports to China had increased from 561 tonnes in 2017 to 9,648 tonnes in 2018. Export sales to Japan also continued to grow on the back of sustained marketing efforts. Exports for the Marketing Year-To-Date to Japan have grown from 473 tonnes in 2017 to 726 tonnes in 2018. Our total exports to the North-East Asian region have grown from 1,417 tonnes in 2017 to 10,624 tonnes in 2018.

Given that the volume available for export is limited, the dramatic increase in demand from China has impacted on sales to our other export regions. Exports of Australian almonds to India decreased from 18,195 tonnes to 15,144 tonnes and sales to Europe decreased from 17,871 tonnes to 13,612 tonnes. It should be noted that for the March to November period, total exports grew by 7.6 percent: ie from 50,751 tonnes in 2018 to 54,628 tonnes in 2018.

Sial Paris

Australian Almonds exhibited at two trade shows in the October to December quarter. In October 2018, we exhibited at Sial Paris. This is the major food exhibition held in Europe last year. The Australian Almond stand was located within the INC pavilion allowing our exporters to leverage the profile and visitor traffic of the whole INC exhibition.

China International Import Expo

The inaugural China International Import Expo was held at the new Convention and Exhibition Center in Shanghai, which was the personal project of China's President, Xi Jinping. Our Australian Almond promotion was within the FoodSA exhibition. The importance of this Expo was underlined by the presence of the Federal Trade Minister, Mr Simon Birmingham MP.



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Almond project expands into three states



One of the group's research blocks is planted at a new 2500 ha commercial almond orchard in New South Wales.

Plant & Food Research Australia's almond research has expanded to Victoria, New South Wales and South Australia.

Planting was completed in winter 2018 and there are 7,105 research trees and 12.3 hectares of trial sites across the three states. The research, funded by Hort Innovation, aims to double almond yield without increasing costs by optimising almond tree architecture and understanding how different cultivars respond when planted at high density.

Since the research team has established similar trials in California, funded by the Almond Board of California, the projects are now relevant to the two largest almond producers in the world: California and Australia who represent 88 percent of the global almond supply. Thanks to the geographical advantage, our scientists have two seasons in one year to conduct their research.

“The research, funded by Hort Innovation, aims to double almond yield without increasing cost”



Our approach is to work with the natural growth habit or tree architecture of specific cultivars and develop minimal “low input” pruning methods to produce trees suitable for commercial high density planting,” says Dr Grant Thorp (left), Scientist at Plant & Food Research Australia.

‘We want to develop management strategies that are cost-effective, simple to implement and preferably “one-off” at the time of orchard establishment instead of an annual requirement.’

Additional benefits will include reduced time for new orchards to produce their first commercial crop, development of tree shapes suitable for ‘shake and catch’ harvesting, and smaller trees for more efficient water use and easier pest and disease management.

Insights into the global trade environment

Ross Skinner, CEO, Almond Board of Australia



At the 2018 Almond Board of California conference, Julie Adams, Vice President, Almond Board of California, Technical and Regulatory Affairs (pictured left) presented an overview of their key global trading issues. As Australian almond exporters are selling into many of the same markets, Julie's insights are valuable for our industry.

Not surprisingly, the first issue raised was tariffs. China has raised its tariffs on Californian almonds to 50 percent, Turkey has increased its tariffs on US almonds to 35 percent and India are still evaluating whether to increase its tariff on inshell almonds.



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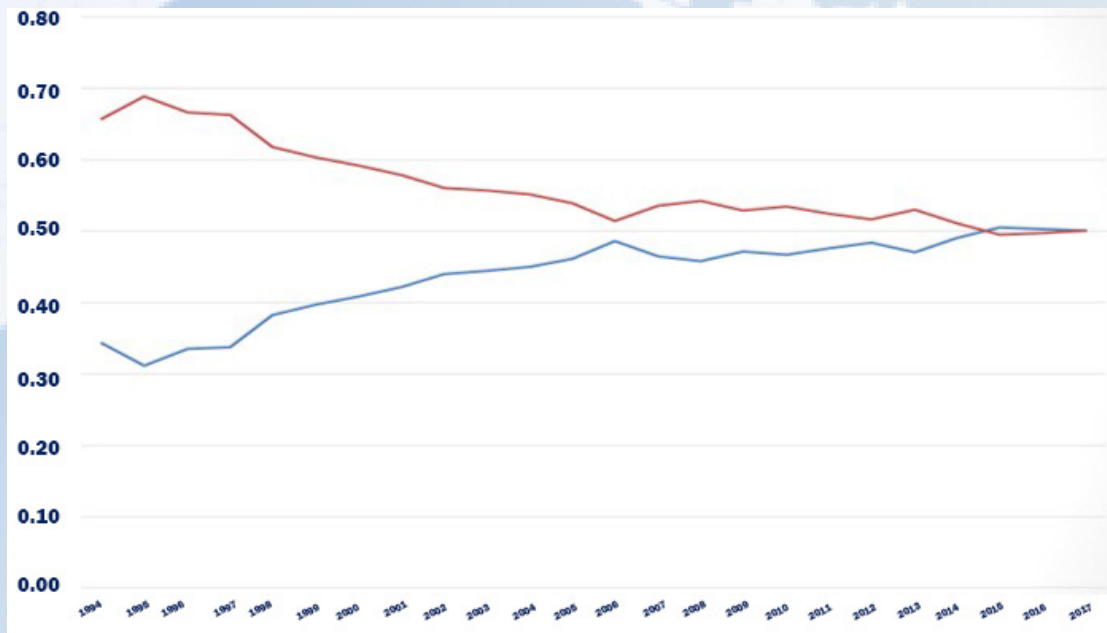
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However, Julie Adams made the strong point that while tariffs can be difficult, technical and phytosanitary barriers are a major concern as they can be harder to address. These issues include: aflatoxin controls, hygiene, pests and fumigation requirements, labelling, quality and grade standards as well as documents and certificates. Some of the practical examples cited were aflatoxin rejections in the EU and Japan.

Currently, global trade relies on the multilateral trading system – the World Trade Organisation – to provide some basic rules of international trade. Two key agreements relate to the *Application of Sanitary and Phytosanitary Measures* (SPS Agreement) and to *Technical Barriers to Trade* (TBT Agreement).

One area where the importance of SBS rules is paramount is the EU Pesticide Legislation. The EU is taking a ‘hazard-based’ rather than a ‘risk-based’ approach in relation to pesticide Maximum Residue Limits (MRLs). Many currently approved chemicals are at risk of being pulled. These include iprodione, glyphosate and

chlorpyrifos. Another trade example relates to tighter aflatoxin controls with enhanced aflatoxin standards and analytical methods.

Julie Adams’ presentation also provided some insights into the importance of Free Trade Agreements (FTAs). Currently the USA has 14 trade agreements covering 20 nations. With a close eye on Australia, Julie compared the USA position with that of Australia as we have 12 trade agreements covering 19 nations. The point was strongly made that failure to negotiate FTAs puts US export interests at a competitive disadvantage with countries that continue to negotiate trade deals. Further, history shows that FTAs have significantly increased trade in agricultural exports.

Clearly, the Almond Board of California, through their Technical and Regulatory Affairs team led by Julie Adams, are committed to engaging with the key agencies at a technical level to find solutions before dispute settlement is needed. This is of major benefit to our Australian almond industry.

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The Australian almond industry and WATER

The drought conditions currently being experienced combined with the high water prices has focussed peoples' attention on expanding horticultural industries such as almonds, citrus and table grapes. All these industries are a leaders in terms of water use efficiency. Over the past decade almonds have been the clear leader in terms of value generated per megalitre of water applied to the crop. This has resulted in the increased investment in almond production just as it has for citrus and table grapes, that have also found profitable markets for their produce in recent years.

Commercial almond crops are grown globally in regions with Mediterranean climates, that have hot dry summers that also offer a low fungal disease pressure environment. This is similar for grapes and other crops and is key to the almond industry's low chemical usage.

Water use efficiency is a driver of efforts to increase yields and optimise water application. Almonds are the leader in Australian horticulture in terms of monitoring soil moisture, calculating application rates and having sophisticated irrigation systems. 99 percent of the almond orchards use

drip irrigation to allow precise timing and application rates and the remaining orchards use low level micro sprinklers. Yields are continuing to improve as planting material, nutrition, soil health and disease management improve. These developments lead to greater returns generated per megalitre of water applied.

Almond orchards use 12-14 megalitres per hectare. The application rates have generally increased as research and practical experience has shown world's best yields of 3.2 tonnes per hectare on average for mature orchards justifies the additional water expense.

Unlike many fresh fruit crops, almonds can adapt to lower water application during drought. Whilst crop yields are reduced there is little impact on product quality.

Annual crop industries such as cotton and rice increase production in the Murray Valley when low water prices for temporary water permits. Rice uses 13 megalitres per hectare and cotton uses 8 megalitres per hectare. The broadacre planting of these crops means large volumes of water are used when the economics for these lower return crops justify planting.

The current almond orchard area in the Murray Valley is 41,000 hectares. Using the higher end of water application for mature orchards of 14 megalitres per hectare, this represent a total industry use of 588 gegalitres or 8.5 percent of water available for irrigated agriculture (6,627 gegalitres). The expected industry expansion to 49,000 hectares in the Murray Valley increases this percentage to 10.1 percent.

Many horticultural industries in the Murray Valley have undergone periods of rapid expansion. Currently almonds, table grapes and citrus are investing in new orchards and vineyards. Previous to this, avocados, vegetables, olives and wine grapes, processing tomatoes, canning fruit, dairy and dried fruits all had times of growth and drew more heavily on water supplies.

There has been movement between crops by growers depending on profitability. For example, dried grapes to wine grapes, wine grapes to table grapes, citrus to wine grapes and recently back to citrus. (Continued page 25).



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Import



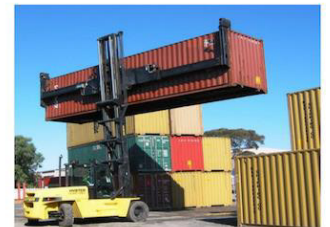
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The separation of water entitlements from land and the creation of the water market has seen and will continue to see a concentration of water use on profitable high value crops. This is heightened during periods of drought when profitable crops can continue to purchase water at higher prices.

Higher water prices are a reality and farmers need to be in profitable industries to survive and thrive. The almond industry has strong marketing fundamentals. The large increases in global supply in the past decade have been sold at viable prices. The strong growth in demand has driven an upward trend in prices despite the increasing production of recent years. The large investment in market development by producing countries, predominantly the US, underpins this growth.

The stronger the farmgate returns the better the industry is placed to secure limited resources such as water and labour and to invest in technologies to improve yield and input efficiencies.

The estimated farmgate value of the 2019 Australian almond crop is estimated to be \$750,000,000 and will move towards \$1 billion in the next five years. Almonds and other profitable industries bring wealth to the communities in which they are located. This in return attracts health services, education facilities, professionals and is the reason Griffith, Mildura and the Riverland towns are regional centres for professional, retail and government services that in turn generate further wealth. Local businesses continue to benefit from the provision of inputs during the orchard development phase that costs around \$75,000 per hectare to establish. The investment in orchards planted between 2016 and 2018 injected over half a billion dollars into the Australian economy, much of this into the

river communities during a period of drought recovery. The planned additional 7,000 hectares in the next few years will bring this investment total to \$1 billion.

Studies in the almond industry have shown six people are employed for every \$1,000,000 dollars of industry value. This implies nearly 4,000 people are employed directly or indirectly as a result of the almond industry in Australia and this number is increasing as the industry expands towards 49,000 hectares in the Murray Valley and a value of \$1 billion per annum.

The almond industry is a strong employer of tertiary qualified staff providing excellent employment opportunities for young graduates returning home to their river communities and for new arrivals.

During the ten-year drought, the water market enabled many unprofitable growers to exit with payouts from their water entitlements whilst others traded permanent water entitlements and became reliant on the temporary water market to secure their water requirements. Those that retained or have purchased water hold valuable assets. Water strategies have become an integral element of the business plans of horticultural enterprises. Unfortunately, the impact of the ten-year drought is still being felt as many growers sold the entitlements to survive financially.

If the low inflows into water storages continue and water prices remain high there will be a raising level of concern about expanding industries and those that apply more to their crops. The above provides the factual basis and rationale behind why water use to grow almonds is an efficient allocation of this precious resource but we are aware emotion will be part of the story as hardship that droughts inevitably brings again impacts our river communities.



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Image 1: Bryobia Mite. Image source: <https://alchetron.com/>



Image 2: Mite symptom. Image source: ABA – Almond Industry Pest & Disease Control Guide 2006

IN THE orchard

Josh Fielke
Industry Development Officer

As I am sure that all growers are aware, it has been a dry year which is beneficial for growers in relation to disease control. However, it can also be beneficial for some pests, especially mites in high traffic areas such as trees along a main track. The two main species of mites that can be found in orchards are the Bryobia Mite (*Bryobia rubrioculus*) and the two - spotted spider mite (*Tetranychus urticae*).

What "mite" this be?

Bryobia mites are brownish, flattened mites with very long front legs as seen in Image 1. During the season they feed on the leaves creating a silver stippling (Image 2). It is important to know that in the brighter parts of the day, the pest cannot be found on the leaves, rather on twigs. Unlike the two - spotted spider mite the Bryobia does not normally produce a webbing.

The damage of the two spotted mites can be seen to have a more aggressive toll on the tree. The pest sucks the contents from individual leaf cells causing the stippling and eventually making the leave turn brown and fall from the tree. The damage causes a reduction in the photosynthesis through the loss of these leaves hereby potentially reducing the size and development of nuts.

Mites survive the winter under bark and in ground litter, where they also hold the ability to

continue to feed and reproduce during this time. Optimally, mite populations should be controlled with a Paraffinic or Petroleum oil spray during dormancy.

It is important to consider the extent of the mite population before spraying as pyrethroids, organophosphates and carbamates as they could potentially upset the natural biological control. For example, you could have a small Bryobia problem then if a chemical control is applied it can raise the number of two spotted mites, as the beneficial predators have been wiped out. Therefore, it is recommended if the population level requires a chemical control that only the areas of infestation are sprayed.

Abamectin is one of the most commonly used active ingredient that is registered for almonds for control of mites. Abamectin works primarily as a nerve toxin that is ingested while feeding on the leaf. Therefore, to gain best control with the chemical the product should be applied to the leaves before they harden off, so that the product is more easily incorporated into the leaves hereby being more available for the mites to ingest. Like any product resistance management should be considered, so if you do have a mite issue and you have already sprayed Abamectin, it is recommended that applying other products are looked at.

For more information

- **Managing abamectin applications**

<http://thealmonddoctor.com/2013/04/12/managing-mites-in-almonds-with-abamectin/>

- **Considerations with Two Spotted Mite**

<http://thealmonddoctor.com/2011/09/22/late-season-leaf-defoliation-due-to-web-spinning-spider-mites/>

- **Integrated Control of Twospotted Mite – including monitoring guidelines**

<http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/pest-insects-and-mites/two-spotted-mite/integrated-control-of-twospotted-mite-in-orchards>

- **Managing mites in the orchard**

<http://www.fgv.com.au/grower-services/latest-updates/technical-articles/478-managing-mites-in-the-orchard>



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2019 Events

JANUARY

SUN	MON	TUES	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January

- 31** ABA Plant Improvement Committee Meeting, Loxton
- 31** ABA Almond Centre Committee Orchard Inspection, Loxton

FEBRUARY

SUN	MON	TUES	WED	THU	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

February

- 4** ABA Market Development Committee Meeting, Mildura
- 4** ABA Production Committee Meeting, Mildura
- 5** ABA Board Meeting, Mildura
- 6** Sunraysia Pre-harvest Study Tour, Lake Powell
- 17** Gulfoods Trade Exhibition begins
- 21** Gulfoods Trade Exhibition ends

MARCH

SUN	MON	TUES	WED	THU	FRI	SAT
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

March

- 5** Foodex Trade Exhibition, Tokyo begins
- 8** Foodex Trade Exhibition, Tokyo begins
- 19** ABA Pollination Committee Meeting, Loxton
- 25** Australian Nut Conference begins, Sydney
- 27** Australian Nut Conference ends, Sydney

ALMOND-CRUSTED SALMON

with salsa and bean salad

Serves: 4

Time to make: 25 mins

INGREDIENTS

- 1/3 cup natural almonds
- 1 cup flat-leaf parsley leaves
- 1 tablespoon lemon juice
- 4 x 125g skinless salmon fillets
- 2 vine-ripened tomatoes, diced
- 2 teaspoons white balsamic
- 1 tablespoon chopped chives
- 2 teaspoons olive oil
- 150g green beans, trimmed, halved
- 150g fresh butter beans, trimmed, halved
- 400g can no-added-salt
- 4-bean mix, rinsed, drained

METHOD

1. Preheat the oven to 200°C. Line a large baking tray with baking paper.
2. Place almonds and 1/2 cup of parsley leaves in a food processor and blitz until finely chopped. Add 2 teaspoons of lemon juice until well combined. Place salmon on prepared tray; top each with one-quarter of the almond mixture. Bake for 10 minutes, or until topping is golden.
3. Meanwhile, combine the tomato, remaining lemon juice, white balsamic, chives and olive oil in a small bowl. Season with black pepper.
4. Place the green and butter beans in a steamer above a saucepan of simmering water. Cover and steam for 3 minutes, or until just tender. Refresh them under cold running water. Drain. Combine beans, 4-bean mix and the remaining parsley.
5. Divide bean mixture between plates. Top with a piece of salmon and spoon over the tomato salsa.

TIP: Butter beans look like green beans — but are yellow. You can use asparagus if you prefer.

Recipe source: Australian Healthy Food Guide www.healthyfoodguide.com.au

